

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC752(G)TM

Ultra High Speed Switching Applications

Computer, Counter Applications

- High transition frequency: $f_T = 400 \text{ MHz (typ.)}$
- Low saturation voltage: $V_{CE(sat)} = 0.3 \text{ V (max)}$
- High speed switching time: $t_{stg} = 15 \text{ ns (typ.)}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	200	mA
Base current	I_B	40	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

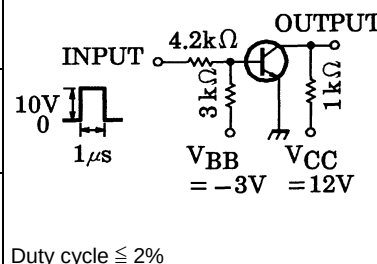
Unit: mm

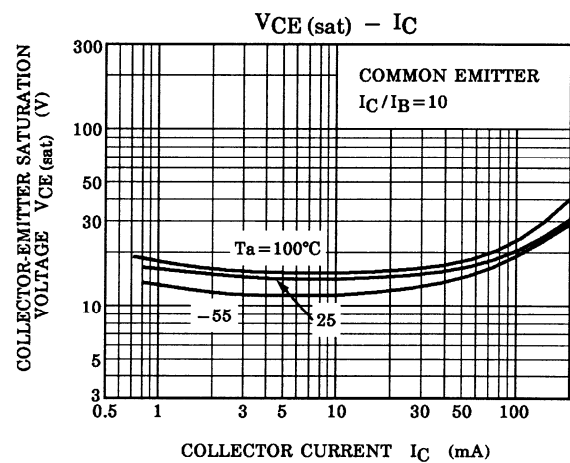
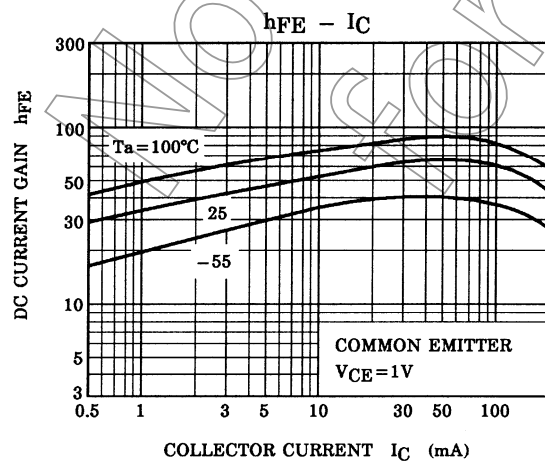
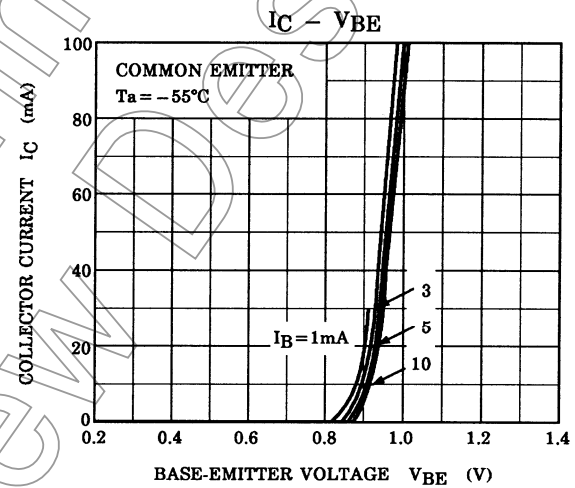
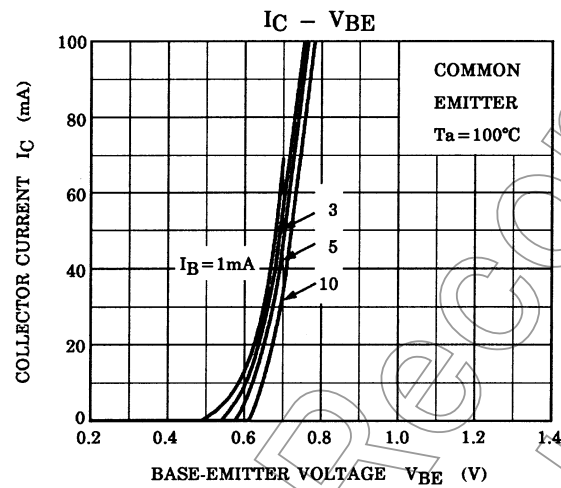
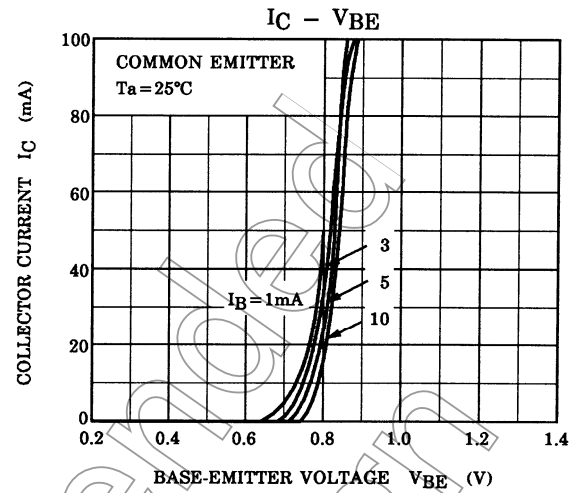
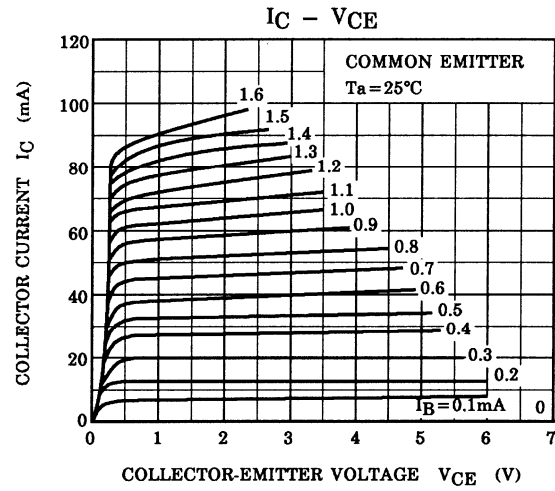
JEDEC	TO-92
JEITA	SC-43
TOSHIBA	2-5F1B

Weight: 0.21 g (typ.)

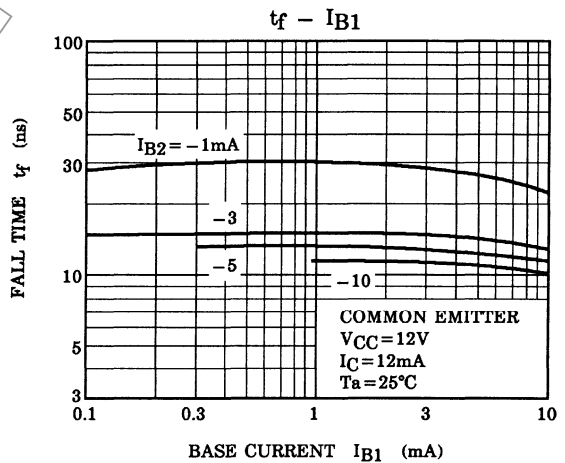
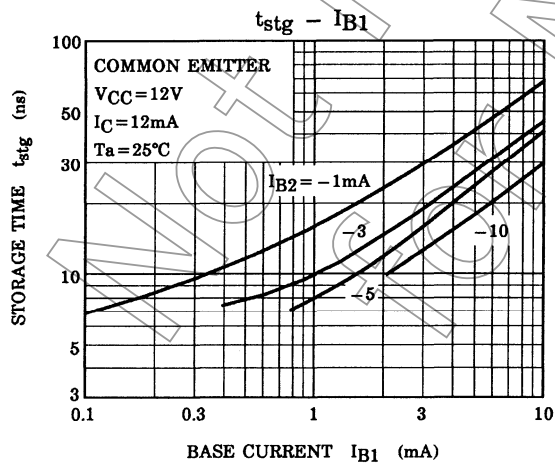
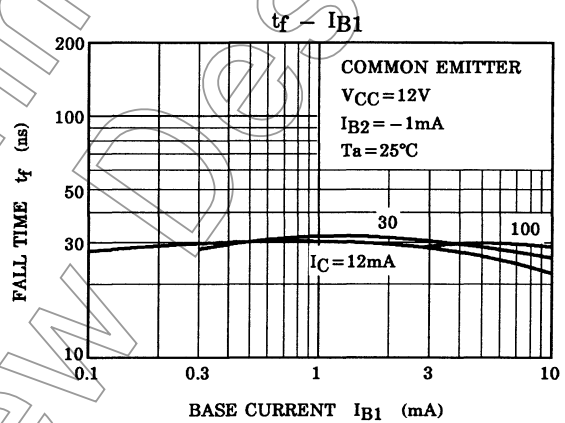
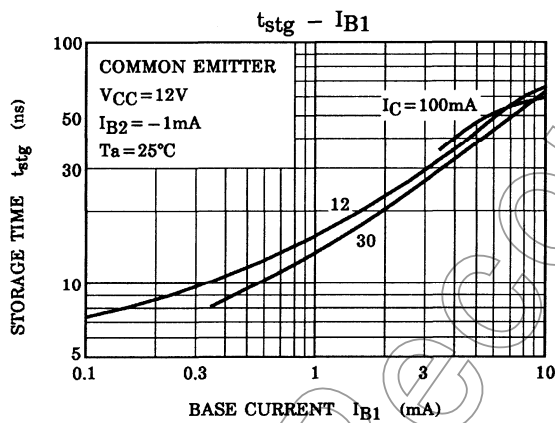
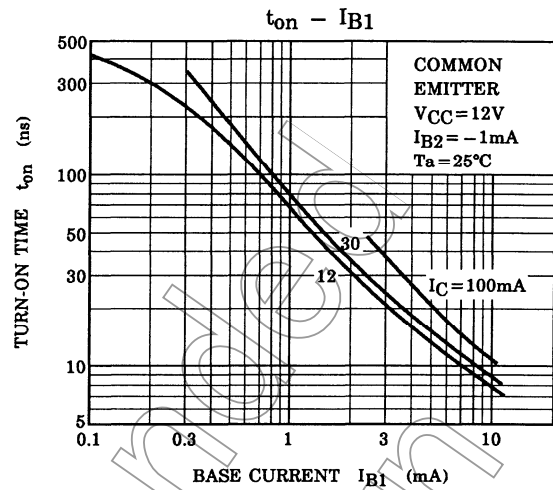
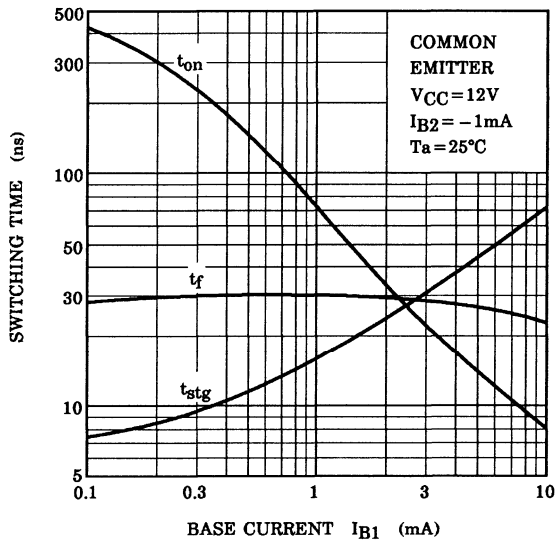
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

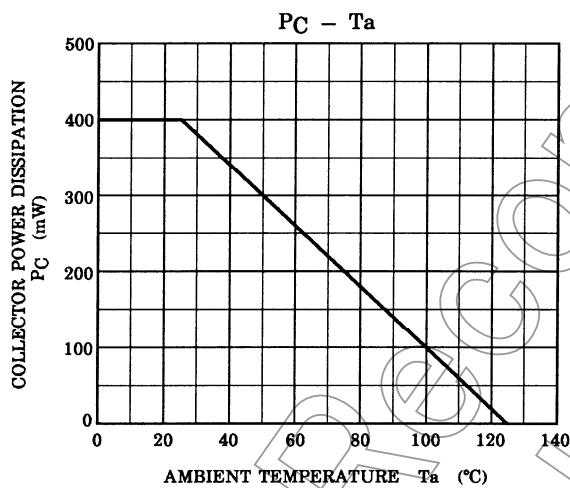
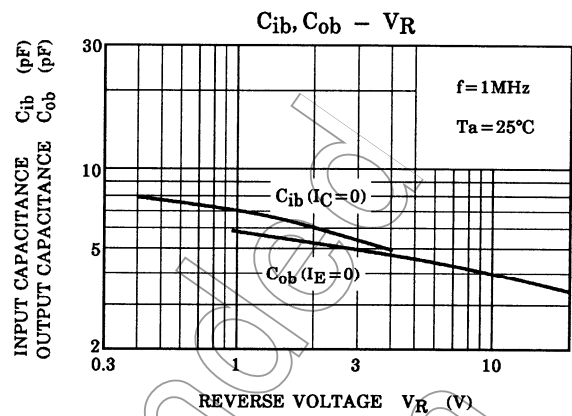
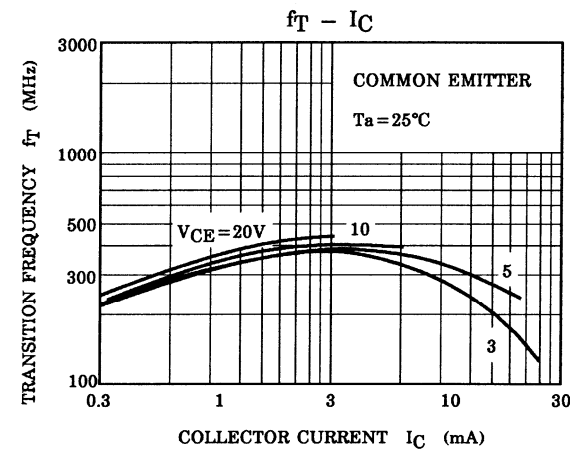
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 40 \text{ V}, I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	0.1	μA
DC current gain	$h_{FE(1)}$ (Note)	$V_{CE} = 1 \text{ V}, I_C = 10 \text{ mA}$	40	—	240	
	$h_{FE(2)}$	$V_{CE} = 1 \text{ V}, I_C = 100 \text{ mA}$	20	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20 \text{ mA}, I_B = 1 \text{ mA}$	—	—	0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20 \text{ mA}, I_B = 1 \text{ mA}$	—	—	1.0	V
Transition frequency	f_T	$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$	200	400	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	4	6	pF
Switching time	Turn-on time	t_{on}	—	70	100	ns
	Storage time	t_{stg}	—	15	30	
	Fall time	t_f	—	30	70	

Note: h_{FE} classification R: 40~80, O: 70~140, Y: 120~240



SWITCHING CHARACTERISTICS





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